

Serial No.: 10/619,520

## REMARKS

### I. Status Summary

Claims 1-18 were pending in the application as filed and have been examined by the U.S. Patent and Trademark Office (hereinafter referred to as "the Patent Office"). Claims 1-18 were subject to the September 8, 2005 Restriction/Election Requirement, in response to which Group IV (claims 13-15) and the species Gly-Pro-Arg-Pro-X were elected. Applicants have requested rejoinder of claims 1-4, 10-12 and 16-17. Accordingly, claims 1-4 and 10-17 are currently pending and claims 5-9, and 18 have been withdrawn. Applicants hereby reserve the right to file one or more divisional applications directed to the subject matter of the withdrawn claims.

The Patent Office asserts that page 1 of the specification should be amended to reflect the status of parent U.S. Patent Application No. 09/462,446. The Patent Office has further objected to the specification upon the assertion that SEQ ID NOs are not disclosed in the specification adjacent to referenced sequences.

The Patent Office has acknowledged and considered the references contained in the December 8, 2005 IDS filed December 8, 2005 have been acknowledged and considered by the Patent Office, but will not list the references on any patent resulting from the subject application because the references were not provided on a separate list in compliance with 37 C.F.R. §1.98(a)(1).

Claim 14 has been objected to under 37 C.F.R. §1.821(d) as allegedly failing to recite the corresponding SEQ ID NO.

Claims 13-15 have been objected to as allegedly requiring the articles "an" and "the" before the terms "adsorber column" in claims 13 and 14-15, respectively.

Claim 15 has been rejected under 35 U.S.C. §112, second paragraph, as being indefinite for allegedly failing to particularly point out and distinctly claim the subject matter to which applicant regards as the invention. Particularly, the Patent Office asserts that the term "Sephacrose" is a trademark/trade name, rendering the claim indefinite.

Claims 13-15 presently stand rejected under 35 U.S.C. §112, first paragraph,

Serial No.: 10/619,520

upon the Patent Office assertion that the specification does not reasonably provide enablement for any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with the rejected claims.

Claims 13 and 15 presently stand rejected under 35 U.S.C. §102(b) as allegedly being anticipated by Hua et al. (1996) *Biochem Biophys Res Commun* 222(2): 576-583 (hereinafter referred to as "Hua et al.").

Claims 13 and 14 presently stand rejected under 35 U.S.C. §102(b) as allegedly being anticipated by Kuyas et al. (1990) *Thrombosis and Haemostasis* 63(3): 439-444 (hereinafter referred to as "Kuyas et al. (1990)").

Claims 13 and 15 presently stand rejected under 35 U.S.C. §102(b) as allegedly being anticipated by Kuyas et al. (1995) *Thrombosis and Haemostasis* 54(1): 40-48 (hereinafter referred to as "Kuyas et al. (1995)").

Claims 13-15 presently stand rejected under 35 U.S.C. §103(a) as allegedly being obvious over Kuyas et al. (1990) in view of Kuyas et al. (1995), upon the assertion that it would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the peptide Gly-Pro-Arg-Pro taught by Kuyas et al. (1995) with the pentapeptide Gly-Pro-Arg-Pro-Lys taught by Kuyas et al. (1990).

Claims 1-4 and 10-17 have been amended herein. Support for the amendments can be found throughout the specification as filed, including particularly at page 6, lines 12-24; page 7, lines 1-19; page 7, lines 27-28 and in the Sequence Listing Statement filed with the subject application. No new matter has been added.

New claims 19-25 have been added. Support for new claims 19-25 can be found throughout the specification as filed, including particularly at page 1, lines 4-6; page 6, lines 12-19; page 6, lines 24-26; page 8, lines 19-24; page 9, lines 17-25; page 9, lines 27-31; and Figure 1. No new matter has been added.

Reconsideration of the application as amended and further in view of the remarks set forth herein below is respectfully requested.

II. Rejoinder of Claims 2-4, 10-12 and 16-17

Claims 1-18 were pending in the subject application as filed. Claims 1-18 were subject to a September 8, 2005 Restriction/Election Requirement, in response to which Group IV (claims 13-15) and the species Gly-Pro-Arg-Pro-X were elected. The Patent Office has withdrawn claims 1-12 and 16-18 from consideration. Claims 5-9, and 18 have been amended herein to reflect the withdrawal of non-elected subject matter. The withdrawal should not be construed as surrender of the non-elected subject matter. Applicants hereby reserve the right to file one or more divisional patent applications with claims directed to the withdrawn subject matter of claims 5-9, and 18.

In the September 8, 2005 Restriction Requirement, the Patent Office noted that claims 2-4, 8-12, and 16-17 are related to claims 13-15 as process and product claims, and that claim 1 was considered to be a linking claim. Thus, under M.P.E.P. § 806.05(h), applicants hereby request rejoinder of the process (or method of use claims) restricted away from product claims, once the product claims are allowed. Once the product claims are allowed and rejoinder is requested, the process claims must be examined. However, in order to retain the right to rejoinder, the process claims must be amended during prosecution to recite the elements of the product claims.

Accordingly, with regard to the elected subject matter as set forth by the Patent Office, applicants respectfully request that the Patent Office consider rejoinder of the subject matter of claims 1-4, 8-12, and 16-17.

III. Response to the Objections to the Specification

III.A. Response to the Lack of Parent Application Status in the Specification

The Patent Office asserts that page 1 of the specification should be amended to reflect the current status of parent U.S. Patent Application No. 09/462,446, now abandoned.

Applicants respectfully submit that the specification has been amended herein in accordance with the Patent Office's suggestions. Particularly, page 1, line 1 of the instant specification has been amended to recite: "This application is a continuation of

Serial No.: 10/619,520

U.S. patent application Serial No. 09/462,446, now abandoned, filed on June 5, 2000..."

No new matter has been added.

Accordingly, applicants respectfully submit that the instant objection to the specification has been addressed.

III.B. Response to the Lack of Sequence Identification in the Specification

The Patent Office has objected to the specification upon the assertion that SEQ ID NOs are not provided adjacent to the referenced sequences. Applicants respectfully submit that the specification has been amended herein to include the appropriate SEQ ID NOs. Particularly, applicants respectfully submit that SEQ ID NOs: 1-8 have been provided for the amino acid sequences disclosed in the specification. Support for the instant amendment to the specification can be found throughout the specification as filed, including particularly in the Sequence Listing Statement. No new matter has been added.

Accordingly, applicants respectfully submit that the instant objection to the specification has been addressed.

IV. Response to the Objection to the IDS

The Patent Office asserts that the references contained in the IDS filed December 8, 2005 have been acknowledged and considered by the Patent Office, but will not be listed on any patent resulting from the subject application because they were not provided on a separate list in compliance with 37 C.F.R. §1.98(a)(1). The Patent Office further asserts that in order to have the references printed on any resulting patent, a separate listing (PTO-1449 form, for example) must be filed within the set period for reply to the instant Official Action.

Accordingly, a PTO-1449 form has been filed herewith, listing the references cited in the December 8, 2005 IDS separately, as required by the Patent Office. Thus, applicants respectfully submit that the instant objection to the IDS has been addressed.

Serial No.: 10/619,520

V. Response to the 37 C.F.R. §1.821(d) Objection of Claim 14

The Patent Office has objected to claim 14 under 37 C.F.R. §1.821(d) as allegedly failing to recite the corresponding SEQ ID NO. in the claim.

Applicants respectfully submit that claim 14 has been amended herein to recite the appropriate SEQ ID NOs per the Patent Office's suggestions. Particularly, claim 14 has been amended to recite, *inter alia*, "The adsorber column according to claim 13, wherein the ligand is a peptide consisting of the amino acid sequence of SEQ ID NO:1 or SEQ ID NO:2, and wherein the X of SEQ ID NO:1 is a polylysine, an  $\epsilon$ -amino caproic acid spacer or a spacer molecule with six C-atoms". Support for the instant amendment to claim 14 can be found throughout the specification as filed, including particularly at page 7, lines 1-5 and the Sequence Listing Statement. No new matter has been added.

Accordingly, applicants respectfully submit that the instant 37 C.F.R. §1.821(d) objection to claim 14 has been addressed.

VI. Response to the Objection to Claims 13-15

The Patent Office has objected to claims 13-15 as allegedly lacking the articles "an" and "the" before the terms "adsorber column" in claims 13 and 14-15, respectively.

Applicants respectfully submit that claims 13-15 have been amended in accordance with the Patent Office's suggestions. Particularly, applicants submit that claim 14 has been amended herein to recite, *inter alia*, "An adsorber column for influencing the microcirculation of a mammal...". Further, applicants submit that claims 14-15 have been amended herein to recite, *inter alia*, "The adsorber column of claim 13...". No new matter has been added.

Accordingly, applicants respectfully submit that the instant objection to claims 13-15 has been addressed.

VII. Response to the 35 U.S.C. §112, Second Paragraph, Rejection of Claim 15

The Patent Office has rejected claim 15 under 35 U.S.C. §112, second paragraph, as indefinite for allegedly failing to particularly point out and distinctly claim

Serial No.: 10/619,520

the subject matter to which applicant regards as the invention. Particularly, the Patent Office asserts that the term "Sephacose" is a trademark/trade name, rendering the claim indefinite.

After careful review of the instant rejection and the Patent Office's basis therefore, applicants respectfully traverse the rejection and submit the following remarks.

Without conceding to the assertions of the Patent Office, applicants respectfully submit that claim 15 has been amended herein to omit reference to the term "Sephacose". Specifically, claim 15 has been amended herein to recite "The adsorber column according to claim 13, wherein the matrix is a carbohydrate matrix." Support can be found throughout the specification as filed, including particularly at page 7, lines 27-28. No new matter has been added.

Accordingly, applicants respectfully submit that the instant 35 U.S.C. §112, second paragraph, rejection of claim 15 has been addressed. As such, applicants respectfully request that the instant rejection be withdrawn at this time. A Notice of Allowance is also respectfully requested.

VIII. Response to the 35 U.S.C. §112, First Paragraph,  
Rejection of Claims 13-15

Claims 13-15 presently stand rejected under 35 U.S.C. §112, first paragraph, upon the Patent Office assertion that the specification does not reasonably provide enablement for any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with the rejected claims. Specifically, the Patent Office asserts that the specification does not reasonably provide enablement for any adsorber column containing a matrix and "any ligand" as recited in the rejected claims. In addition, the Patent Office asserts that the specification does not reasonably provide enablement for the polypeptide containing the amino acid sequence Gly-Pro-Arg-Pro-X, wherein X can be any amino acid. Further, the Patent Office asserts that claim 14 recites the terms "containing" and "having", which

Serial No.: 10/619,520

allegedly provide insufficient direction.

After careful review of the instant rejection and the Patent Office's basis therefore, applicants respectfully traverse the rejection and submit the following remarks.

Without conceding to the assertions of the Patent Office, applicants respectfully submit that independent claim 13 has been amended herein to make specific reference to SEQ ID NOs 1-8 and to more particularly define the "X" of the claimed amino acid sequence. Particularly, independent claim 13 has been amended herein to recite, *inter alia*, an adsorber column containing a matrix and a ligand, wherein said ligand is a peptide consisting of the amino acid sequence of SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, or SEQ ID NO:8, and wherein the X of SEQ ID NO:1 and SEQ ID NO:3 is a polylysine, an  $\epsilon$ -amino caproic acid spacer or a spacer molecule with six C-atoms. Support for the amendment can be found throughout the specification as filed, including particularly at page 7, lines 1-19, and in the Sequence Listing Statement filed with the subject application. No new matter has been added.

In addition, applicants respectfully submit that claim 14 has been amended to replace the terms "containing" and "having". Particularly, claim 14 has been amended herein to recite, *inter alia*, "The adsorber column according to claim 13, wherein the ligand is a peptide consisting of the amino acid sequence of SEQ ID NO:1 or SEQ ID NO:2, and wherein the X of SEQ ID NO:1 is a polylysine, an  $\epsilon$ -amino caproic acid spacer or a spacer molecule with six C-atoms". No new matter has been added.

Accordingly, applicants respectfully submit that in light of the amendments to claims 13 and 14, a person skilled in the art to which the presently claimed subject matter pertains or to which it is most nearly connected could make or use the presently disclosed subject matter commensurate in scope with the claims. Thus, applicants submit that the instant 35 U.S.C. §112, first paragraph, rejection of claims 13 and 14 have been addressed. Applicants further submit that claim 15 depends from claim 13, and as such, is also believed to address the instant rejection.

Serial No.: 10/619,520

Accordingly, applicants respectfully request that the instant 35 U.S.C. §112, first paragraph, rejection of claims 13-15 be withdrawn. A Notice of Allowance is also respectfully requested.

IX. Response to the 35 U.S.C. §102(b) Rejections of Claims 13-15

IX.A. Response to the Rejection of Claims 13 and 15 in view of Hua *et al.*

The Patent Office has rejected claims 13 and 15 under the provisions of 35 U.S.C. §102(b) in view of Hua *et al.* as allegedly teaching each and every element of the rejected claims. Particularly, the Patent Office asserts that Hua *et al.* teach a CH-Sepharose Gly-Pro-Arg-H adsorber column containing a matrix (Sepharose) and a ligand (Gly-Pro-Arg) wherein the Gly-Pro-Arg has a specificity for fibrin and/or fibrinogen.

Preliminarily, applicants note that it is well settled that for a cited reference to qualify as prior art under 35 U.S.C. § 102, each element of the claimed subject matter must be disclosed within the reference. "It is axiomatic that for prior art to anticipate under 102 it has to meet every element of the claimed invention." Hybritec, Inc. v. Monoclonal Antibodies, Inc., 802 F.2d 1367, 231 U.S.P.Q. 81 (Fed. Cir. 1986). Thus, applicants respectfully submit that for Hua *et al.* to be an anticipation reference under 35 U.S.C. § 102, the reference must disclose each and every element of the claimed subject matter. Therefore, the positions of the Patent Office as summarized below with respect to claims 13 and 15 are respectfully traversed as described below.

Without conceding to the Patent Office assertions, applicants submit that claim 13 has been amended herein to recite, *inter alia*, an adsorber column for influencing the microcirculation of a mammal, said adsorber column containing a matrix and a ligand, wherein said ligand is a peptide consisting of the amino acid sequence of SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, or SEQ ID NO:8, and wherein the X of SEQ ID NO:1 and SEQ ID NO:3 is a polylysine, an  $\epsilon$ -amino caproic acid spacer or a spacer molecule with six C-atoms; wherein said ligand has a specificity for fibrin and/or fibrinogen. Support for the amendment to claim 13 can be found throughout the specification as filed, including particularly at page 7,



Serial No.: 10/619,520

lines 1-19 and in the Sequence Listing Statement filed with the subject application. No new matter has been added.

Contrary to the Patent Office's assertions, applicants respectfully submit that Hua et al., do not recite the ligand Gly-Pro-Arg, deemed by the Patent Office to be highly similar to the presently claimed ligand Gly-Pro-Arg-Pro-X of claim 14. Rather, Hua et al. appears to only disclose the peptide Pro-Gly-Arg (See, for example, page 577 "Protein Purification", and page 578, second paragraph). Applicants respectfully submit that the Patent Office has confused the adsorber column sequence Pro-Gly-Arg with the disclosure in Hua et al. of a chimeric plasminogen activator consisting of Gly-Pro-Arg heteropeptide fused to truncated urokinase-type plasminogen activator has a six-fold greater affinity for fibrinogen compared to native low molecular weight urokinase, *i.e.*, a high affinity fibrinogen. In contrast, amended claim 13 recites sequences that are distinct from the sequence coupled to the Sepharose-based adsorber column disclosed in Hua et al.

Accordingly, applicants respectfully submit that independent claim 13 has been distinguished over Hua et al. Applicants further submit that claims 14-15 depend from independent claim 13. As such, applicants respectfully submit that the rejection of claims 14-15 has been addressed as well. Accordingly, applicants respectfully request that the instant rejection of claims 13-15 under 35 U.S.C. § 102(b) Hua et al. be withdrawn at this time. A Notice of Allowance is also respectfully requested.

IX.B. Response to the Rejection of Claims 13-14 in view of Kuyas et al. (1990)

The Patent Office has rejected claims 13-14 under the provisions of 35 U.S.C. §102(b) in view of Kuyas et al. (1990) as allegedly teaching each and every element of the rejected claims. Particularly, the Patent Office asserts that Kuyas et al. (1990) teaches an adsorber column containing a matrix (Fractogel) and a ligand (Gly-Pro-Arg-Pro-Lys), wherein the Gly-Pro-Arg-Pro-Lys ligand has specificity for fibrin and/or fibrinogen.

Serial No.: 10/619,520

After careful review of the instant rejection and the Patent Office's basis therefore, applicants respectfully traverse the rejection and submit the following remarks.

Without conceding to the Patent Office's assertions, applicants respectfully submit that independent claim 13 has been amended herein to recite use of the adsorber column for influencing microcirculation in a mammal. Particularly, independent claim 13 has been amended to recite, *inter alia*, "An adsorber column for influencing the microcirculation of a mammal, said adsorber column containing a matrix and a ligand, wherein said matrix comprises a material selected from glass, carbohydrates, and polyamides...wherein said adsorber column is useful individually or as one of a pair or more of adsorber columns for influencing the microcirculation of a mammal." Applicants respectfully submit that Kuyas et al. (1990) do not disclose such features. Support for the amendment to claim 13 can be found throughout the specification as filed, including particularly at page 6, lines 12-24, page 7, lines 27-28; and in Figure 1. No new matter has been added.

To elaborate, applicants submit that the disclosure of Kuyas et al. (1990) appears be limited to the isolation and purification of fibrin or fibrinogen in pooled plasma. In comparison, the presently disclosed subject matter recites the surprising finding that with the help of adsorber columns, effective *in vitro* treatment of a patient's or a mammal's blood (*i.e.*, an *ex vivo* treatment) influencing blood rheology in the patient or mammal can be realized. Accordingly, applicants respectfully submit that the presently claimed subject matter goes beyond the teaching of Kuyas et al. (1990).

In addition, applicants respectfully submit that Kuyas et al. (1990) appears to be limited to an adsorber column containing a Fractogel matrix. Applicants submit that Fractogel is a synthetic methacrylate based polymeric resin. In contrast, applicants submit that claim 13 has been amended herein to recite that the matrix comprises a material selected from glass, carbohydrates, and polyamides. Accordingly, independent claim 13 is believed to have been distinguished from Kuyas et al. (1990).

Serial No.: 10/619,520

Thus, applicants respectfully submit that the instant 35 U.S.C. §102(b) rejection of independent claim 13 in view of Kuyas et al. (1990) has been addressed. Applicants further submit that claim 14 depends from claim 13 and is also believed to have addressed the instant rejection. Accordingly, applicants respectfully request that the instant 35 U.S.C. §102(b) rejection of claims 13-14 in view of Kuyas et al. (1990) be withdrawn at this time. A Notice of Allowance is also respectfully requested.

IX.C. Response to the Rejections of Claims 13 and 15 in view of  
Kuyas et al. (1995)

The Patent Office has rejected claims 13 and 15 under the provisions of 35 U.S.C. §102(b) in view of Kuyas et al. (1995) as allegedly teaching each and every element of the rejected claims. Particularly, the Patent Office asserts that Kuyas et al. (1995) teaches an adsorber column containing Gly-Pro-Arg-Pro-Sepharose, wherein the Gly-Pro-Arg-Pro (GPRP) is the ligand and Sepharose is the matrix. The Patent Office further asserts that Kuyas et al. (1995) teaches that GPRP-Sepharose affinity chromatography can be used for the isolation of fibrinogen from small amounts of plasma.

After careful review of the instant rejection and the Patent Office's basis therefore, applicants respectfully traverse the rejection and submit the following remarks.

As recited in detail herein above, applicants respectfully submit that independent claim 13 has been amended to recite, *inter alia*, "An adsorber column for influencing the microcirculation of a mammal, said adsorber column containing a matrix and a ligand...wherein said adsorber column is useful individually or as one of a pair or more of adsorber columns for influencing the microcirculation of a mammal." Applicants respectfully submit that Kuyas et al. (1995) do not disclose such a feature. Support for the instant amendment to claim 13 can be found throughout the specification as filed, including particularly at page 6, lines 12-24. No new matter has been added.

Serial No.: 10/619,520

To elaborate, applicants respectfully submit that the disclosure of Kuyas et al. (1995) appears to be limited to the isolation and purification of fibrin or fibrinogen in pooled plasma. In comparison, the presently disclosed subject matter recites the surprising finding that with the help of adsorber columns, effective *in vitro* treatment of a patient's or a mammal's blood (*i.e.*, an *ex vivo* treatment) influencing blood rheology in the patient or mammal can be realized. Accordingly, applicants respectfully submit that the new and surprising subject matter goes beyond the teaching of Kuyas et al. (1995).

In addition, the Patent Office asserts that Kuyas et al. (1995) teach an adsorber column containing Gly-Pro-Arg-Pro-Sepharose for use in affinity chromatography (See, Official Action, page 5). Applicants respectfully submit that independent claim 13 has been amended herein to clarify that the "X" in SEQ ID NO:1 (Gly-Pro-Arg-Pro-X) is a polylysine, an  $\epsilon$ -amino caproic acid spacer, or a spacer molecule with six C-atoms. Particularly, claim 13 has been amended herein to recite, *inter alia*, an adsorber column containing a matrix and a ligand, wherein said ligand is a peptide consisting of the amino acid sequence of SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, or SEQ ID NO:8, and wherein the X of SEQ ID NO:1 and SEQ ID NO:3 is a polylysine, an  $\epsilon$ -amino caproic acid spacer or a spacer molecule with six C-atoms. Applicants respectfully submit that the ligand Gly-Pro-Arg-Pro disclosed in Kuyas et al. (1995) clearly differs from the ligand Gly-Pro-Arg-Pro-X, wherein X is a polylysine, an  $\epsilon$ -amino caproic acid spacer, or a spacer molecule with six C-atoms, as disclosed in independent claim 13. Accordingly, applicants respectfully submit that the ligands recited in amended claim 13 are novel in view of the ligands disclosed in Kuyas et al. (1995).

Thus, applicants respectfully submit that the instant 35 U.S.C. §102(b) rejection of independent claim 13 in view of Kuyas et al. (1995) has been addressed. Applicants further submit that, in light of its dependency from independent claim 13, the instant rejection of claim 15 has been addressed as well. Accordingly, applicants respectfully request that the instant 35 U.S.C. §102(b) rejection of claims 13 and 15 in view of Kuyas

Serial No.: 10/619,520

et al. (1995) be withdrawn at this time. A Notice of Allowance is also respectfully requested.

X. Response to the 35 U.S.C. §103(a) Rejections of Claims 13-15 Over Kuyas et al. (1990) in View of Kuyas et al. (1995)

Claims 13-15 have been rejected under the provisions of 35 U.S.C. § 103(a) as allegedly being obvious over Kuyas et al. (1990) in view of Kuyas et al. (1995). Particularly, the Patent Office asserts that Kuyas et al. (1990) teach each and every element of the rejected claims, except that the matrix is Sepharose. However, the Patent Office asserts that Kuyas et al. (1995) provides for the deficiencies in Kuyas et al. (1990). Accordingly, the Patent Office asserts that it would have been obvious to one of ordinary skill in the art at the time the presently disclosed subject matter was made to combine the Kuyas et al. (1990) and Kuyas et al. (1995) references to arrive at the presently claimed subject matter.

After careful review of the instant objection and the Patent Office's basis therefore, applicants respectfully traverse the objection and submit the following remarks.

Initially, applicants respectfully submit that in order to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation in the references themselves to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. Manual of Patent Examining Procedures (MPEP) 2142; *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

The Patent Office asserts that Kuyas et al. (1990) teach each and every element of the rejected claims, except wherein Sepharose is the matrix. However, the Patent Office asserts that Kuyas et al. (1995) teaches an adsorber column containing the Gly-

Serial No.: 10/619,520

Pro-Arg-Pro-Sepharose, wherein Sepharose is the matrix for the isolation of fibrinogen from small amounts of plasma. However, as discussed in detail herein above, applicants respectfully submit that neither Kuyas et al. (1990) nor Kuyas et al. (1995) teach the surprising finding that with the help of adsorber columns, effective *in vitro* treatment of a patient's or a mammal's blood (*i.e.*, an *ex vivo* treatment) influencing blood rheology in the patient or mammal can be realized, as currently recited in the presently disclosed subject matter. Accordingly, applicants respectfully submit that the new and surprising subject matter goes beyond the teaching of Kuyas et al. (1990) and Kuyas et al. (1995), either alone or in combination.

Thus, applicants respectfully submit that Kuyas et al. (1990) and Kuyas et al. (1995), either alone or in combination, do not teach or suggest each and every element of the rejected claims. As such, the combination of Kuyas et al. (1990) and Kuyas et al. (1995) does not support the instant rejection of the rejected claims. Accordingly, the rejected claims are believed to be patentably distinguished over the cited combination.

Hence, applicants respectfully request that the instant rejection of claims 13-15 under 35 U.S.C. §103(a) in view of Kuyas et al. (1990) and Kuyas et al. (1995) be withdrawn at this time. A Notice of Allowance is also respectfully requested.

#### XI. Discussion of New Claims 19-25

New claims 19-25 have been added herein as indicated above.

Support for new claims 19-25 can be found throughout the specification as filed, including particularly at page 1, lines 4-6; page 6, lines 12-19; page 6, lines 24-26; page 8, lines 19-24; page 9, lines 17-25; page 9, lines 27-31; and Figure 1. No new matter has been added.

Applicants respectfully submit that new claims 19-25 are patentable over the references cited by the Patent Office for the reasons set forth herein above with respect to claims 13-15. Applicants further respectfully submit that new claims 19-25 are allowable over the cited art of record. Accordingly, allowance of these claims is respectfully requested.

Serial No.: 10/619,520

XII. Conclusion

In light of the above amendments and remarks, it is respectfully submitted that the present application is now in proper condition for allowance, and such action is earnestly solicited.

If any minor issues should remain outstanding after the Examiner has had an opportunity to study the Amendment and Remarks, it is respectfully requested that the Examiner telephone the undersigned attorney so that all such matters may be resolved and the application placed in condition for allowance without the necessity for another Action and/or Amendment.

DEPOSIT ACCOUNT

A check in the amount of \$1450.00 (representing the \$1020.00 Extension of Time fee, the \$250.00 additional claims fee, and the \$180.00 Information Disclosure Statement Fee) is enclosed, and the Commissioner is hereby authorized to charge any other fee associated with the filing of this correspondence, to Deposit Account No. 50-0426.

Respectfully submitted,

JENKINS, WILSON, TAYLOR, & HUNT, P.A.

Date: September 13, 2006

By: 

Arles A. Taylor, Jr.  
Registration No. 39,395

AAT/PAD/omb  
Customer No. 25297

1328/2/2